NATIONAL SOFTWARE QUALITY EXPERIMENT
A LESSON IN MEASUREMENT
1992-1997

KEY WORDS
Analysis Bins
Common problems
Core samples
Defect types
Experiment participants
Software Inspection Lab
Software process maturity level
Standard of excellence
Return on investment

PROLOGUE

The nation's prosperity is dependent on software. The nation's software industry is slipping, and it is slipping behind other countries. The National Software Quality Experiment is riveting attention on software product quality and revealing the patterns of neglect in the nation's software infrastructure.

ABSTRACT

In 1992 the DOD Software Technology Strategy set the objective to reduce software problem rates by a factor of ten by the year 2000. The National Software Quality Experiment is being conducted[1] to benchmark the state of software product quality and to measure progress towards the national objective.

The National Software Quality Experiment is a mechanism for obtaining core samples of software product quality. A micro-level national database of product quality is being populated by a continuous stream of samples from industry, government, and military services. This national database provides the means to benchmark and measure progress towards the national software quality objective and contains data from 1992 through 1997.

The centerpiece of the experiment is the Software Inspection Lab where data collection procedures, product checklists, and participant behaviors are packaged for operational project use. The uniform application of the experiment and the collection of consistent measurements are guaranteed through rigorous training of each participant. Thousands of participants from dozens of organizations are populating the experiment database with thousands of defects of all types along with pertinent information needed to pinpoint their root causes.

To fully understand the findings of the National Software Quality Experiment, the measurements taken in the lab and the derived metrics are organized along several dimensions including year, software process maturity level, organization type, product type, programming language, and industry type. These dimensions provide a framework for populating an interesting set of analysis bins with appropriate core samples of software product quality.

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[1] The National Software Quality Experiment is an entrepreneurial activity.